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ABSTRACT

The research question posed in this study is as follows: How are small, rural school districts different from other school districts? The study involved analysis of data from 52 unit (K-12) school districts in a 9-county region of East Central Illinois. Data were collected from the 1986 school district report cards and from Illinois State Board of Education reports. Eighteen variables were selected relating to the school districts' output measures, curricula, staffing, demographic characteristics, and finances. The study indicated that small, rural school districts were stable educational communities, with certain curricular advantages. This study showed that small, rural schools may present some unique problems as well as opportunities, but as a class of districts, they neither exceed nor lag behind in their ability to offer quality educational services. (SI)

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CITY SCHOOLS, RURAL SCHOOLS

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March 1988

This series of monographs is dedicated to Professor Lucy Jen Huang Hickrod, late of the Sociology Department of Illinois State University. Death has forever taken Professor Huang Hickrod from intellectual labors, but she remains an inspiration to her husband, her family and her many friends. Sic transit Gloria Mundi.

INTRODUCTION

Conventional wisdom in education has held that small, rural school districts are a problem. They are considered to be inefficient and they are often cited as offering insufficient curricular choices to meet student needs. This conventional wisdom says that small, rural school districts do an inadequate job of preparing their students for further education or for careers and that they cost too much. They are regarded as being the vestigial remains of an earlier era of simpler values and dynamic agrarianism and their continued existence is seen as a perverse example of the romantic myth of local control.

The prevailing view of many early educational leaders is reflected by the comments of Cubberley that rural communities would gain through school district consolidation and that:

> The chief right of which the people of the rural districts would be deprived by such a reorganization would be the right to continue to mismanage and misdirect the education of their children by means of a system of school organization and administration the usefulness of which has long passed by.[1]

This view of the rural school continued through the middle years of the century. One text, for example, stated as a matter of fact that small, rural school units needed to be consolidated not only for reasons of economy, but to provide a richer educational program for rural children and to equalize educational opportunity and the financial burden of supporting schools.[2] This attitude and set of beliefs led to school district reorganization and consolidation in most states and resulted in the rapid disappearance of many small, rural school districts by the 1960s. The situation is described by Sher and Tompkins as one where:

> Large, new, rural schools and school districts were a tangible and effective symbol of the modernization that increasingly permeated all aspects of rural life in America. In education, modernization, itself, was a proxy for the higher quantity and quality of educational resources (teachers, laboratories, vocation education, and so on) that had been both long desired and long derived. Rural people wanted these resources because they both assumed and had repeatedly been told, that such resources would lead directly to increased learning and, thereby, an increased chance of success for their children.[3]

Sher and Tompkins reviewed the literature on school district consolidation and concluded that the evidence was far from clear that the consolidation of small, rural school districts into larger units had resulted in increased quality or economics of operations. They drew three lessons from their study:

1. Small schools deserve more attention.

2. Alternatives to consolidation and reorganization should be seriously considered.

3. Research done to demonstrate the value of proposed reforms should be scrutinized carefully.[4]

The conventional wisdom about small, rural schools does not bear up under close scrutiny and, as is the case with many public policy issues, both the problem and its potential solutions emerged as far more complex than most people originally thought. Monk and Haller studied small, rural school districts in New York, and, while they found that major problems existed in such districts, they concluded that the traditional policy of promoting school district reorganization and consolidation was not an effective solution. They proposed a set of solutions for the problem of small, rural school districts that allowed a great deal of local flexibility and multiple policy options.[5] The solution to problems which might be present in small, rural school districts does not seem to lie in a policy which concentrates on the aggregation of these districts into large units. The problem may not be one of size alone, but one of structure and some unique characteristics of such school districts.

The heyday of rural school consolidation in Illinois occurred in the 1940s as a result of a number of legislative initiatives designed to encourage a reduction in the number of small school units.[6] As the data in Table 1* indicate, the number of Illinois public school districts fell rapidly in the 15 years after 1945. Since 1960, another 40 percent decline in the number of districts has taken place. However, Illinois still has more school districts than any other state, except for California and Texas.

In a 1985 report, the Illinois State Board of Education reiterated its support for continued consolidation of school districts in the state in order to ensure that high schools are of sufficient size to offer adequate curricula; to facilitate coordination of curricula, assessment programs, and student services; and to promote adequacy and equity in the distribution of resources.[7] School district reorganization and consolidation became an important part of the education reform debates in Illinois in 1985 and a school district consolidation plan was adopted by the General Assembly that year only to be largely dismantled the following year. The program provoked tremendous controversy and became a major political issue throughout the state. The battle over school district reorganization and consolidation in the 1985-86 period was based more on ideology and special interests than it was on solid information about small school districts and their programs.[8] Attempts to reform Illinois' system of public school finance continue to be plagued by the state's complex pattern of school district organization and the presence of a large number of very small school units.[9]

School district reorganization and consolidation remains an important and controversial education policy issue. One aspect of the issue that remains unclear is the nature of the problem with small, rural school districts.

RESEARCH QUESTION

The research question posed in this study is how are small, rural school districts different from other school districts. What characteristics do they have that make them significantly different from large school units?

THE STUDY

This study involved analysis of data from fifty-two unit (K-12) school districts in a nine county region in East Central Illinois. Data were collected from the 1986 school district report cards and from Illinois State Board of Education reports. Eighteen variables were selected relating to school districts' output measures, curricula, staffings, demographic characteristics,

*Tables are placed at the end of the document

and finances. The districts in this study were not chosen to be representative of the state's public school districts. Illinois is a complex, diverse state. It requires tremendous sensitivity and skill to make a comparison between a wealthy school district serving a community of well-educated professionals in the Chicago suburbs and a low-income district in Southern Illinois serving a depressed, rural community in a coal mining region. The school districts used in this study were located in a homogeneous area where there are not wide variations in social and cultural characteristics. This largely eliminated problems resulting from labor market effects, regional price effects, substantial racial and income differentials, and diverse political cultures. There are 63 unit school districts in the region studied (Champaign, Ford, Douglas, Piatt, Vermilion, Iroquois, McLean, Dewitt, and Macon Counties). Eleven districts were not used in the study because they either did not respond to the request for data or presented incomplete data. A nonrespondent study did not show any significant differences between the districts not used and the ones used in the study. The remaining 52 districts were divided into four categories:

1. Urban Districts (U) were those which served communities with a population of 10,000 or more (n = 6).

2. Large, Rural Districts (RI) were those serving small communities (population less than 10,000), but with a total enrollment exceeding 1,000 pupils (n = 13).

3. Medium Rural District (R2) were those serving small communities and having a total enrollment between 500 and 999 pupils (n = 20).

4. Small Rural Districts (R3) were those serving small communities having a total school enrollment of less than 500 pupils (n = 13).

The working hypothesis was that the small, rural districts are significantly different from the other districts on the 18 variables used in the study. The four divisions were used to test where differences might be significant. For example, on a particular variable it was important to know if small rural districts were significantly different from all other districts; whether all rural districts were significantly different from urban districts; or whether small and medium-sized rural districts might differ from urban and large, rural districts. Therefore, the hypothesis was that there were no significant differences among district types on the variables used. Analysis was done using one-way analysis of variance (ANOVA) with planned orthogonal contrasts employed with the variables showing statistically significant F-ratios. The data reported were from the 1985-86 school year. The unit of analysis was the school district.

FINDINGS

Output and Curriculum Measures.

The data on the six output and curriculum measures are presented in Table 2, with the results of the ANOVA. None of these variables was significant at the .05 level, and, as a result, the null hypothesis of no differences between group means was not rejected.

All districts in the study had a combined mean on the mean composite ACT for the 1985-86 senior class of 18.9. The means were slightly above that for urban and large, rural school districts. Actually, the lowest group mean was established by the medium-sized rural districts (18.5). The coefficient of variation of .075 indicated little variation among districts in the study. The hypothesis that small, rural school districts had a lower mean composite ACT score, and, hence, a lower academic output, was not supported. This was found in spite of the fact that a higher percentage of seniors in small, rural school districts (68%) took the ACT than for

the total group of districts in the study (61%). It could be reasoned that a higher proportion of students taking the test might depress the mean score for the districts, but these data did not indicate that was necessarily true.

The argument that pupils in small, rural school districts do not have access to adequate coursework in the standard curriculum was not supported by these data. The measure tested did not indicate the level or nature of the specific coursework, but only provided information on the proportion of high school students taking courses in the major curricular areas of mathematics, science, English and social studies. Therefore, these data should be interpreted with extreme caution. A high school senior taking elementary algebra and another taking advanced calculus would be counted identically on this measure. However, the data may provide some indication of the amount of coursework being taken in the basic subject areas. The findings of this study show that there were no significant differences between the percentages of high school students in small, rural school districts and in other districts taking courses in mathematics, science, English, and social studies. A higher percentages of students in small, rural districts were enrolled in science (60%) compared to the average of all of the districts (58%). The small, rural district means were lower in mathematics (71% versus 73%), English (90% versus 94%) and social studies (58% versus 63%). As indicated, these differences were not significantly different among groups of districts. Students in small, rural districts were enrolled in basic subjects in about the same proportion as students in other districts. From these data, one cannot indicate the nature of the courses being taken. There was the least variation among districts in the percent enrolled in mathematics and the greatest variation in the percent enrolled in social studies.

Staffing Variables.

All districts in the study had an average of 19.5 elementary pupils per elementary teacher. Small, rural districts had an average elementary pupil-teacher ratio of 18.7, but this was not significantly different from the ratios in urban district (19.6); larger, rural districts (19.5); or medium-sized, rural districts (19.9). The coefficient of variation of .146 showed some variability of elementary pupil-teacher ratios among districts, but the variation within groups was greater than the variation among groups. Therefore, small, rural school district were not distinguished by larger or smaller elementary classes from other districts.

The situation was quite different for secondary pupil-teacher ratios. Small, rural districts had significantly smaller secondary pupil-teacher ratios. The small, rural district mean of 9.4 was considerably below the mean of 14.8 for all districts in the study and significantly below the means for urban school districts (22.4); large, rural districts (16.6); and medium-sized, rural districts (14.8).

The pupil-administrator ratio was also significantly lower in small, rural schools than it was in other types of districts, as shown in Table 3. The pupil-administrator ratio in small, rural schools was over 30 percent lower than the average for all districts in the study. The very small pupil enrollments and accompanying diseconomies of scale in small, rural school districts seemed to create more advantageous secondary pupil-teacher ratios and pupil-administrator ratios. This provided a benefit for pupils in small, rural districts, but increased per unit costs. The benefits were not readily evident in mean composite ACT scores, but the interrelationships of all the variables at play here were well beyond the scope of this study. The analysis of variance showed that the average teacher salary variable was statistically significant, but the planned orthogonal contrasts test showed a different pattern than other significant variables. The average teacher salary for small, rural schools were significantly different from the salary level of urban districts and large, rural districts, but not from medium-sized, rural districts. Further testing showed that small and medium-sized rural school districts, as a group, had

significantly lower average teacher salaries than urban and large, rural districts, as a group. The average teacher salary gap between small, rural school districts and urban school districts in the same region was over $4,000 per year.

Also, small, rural school districts paid their administrators significantly less than was true in other district groups. Urban districts paid administrators an average of $37,292, while small, rural districts paid $32,720. The grand mean for all districts was $35,017.

Demographic and Financial Variables.

It was hypothesized that the stability of small rural school districts might provide an educational advantage. The variable of the percent student mobility in the district (portion of students entering or leaving the school during the year) was statistically significant, but only the urban districts had significantly higher student mobility rates than small, rural schools. The finding here was that rural school districts experienced less student mobility than the urban school districts in the same area.

The percent low-income enrollment variable was statistically significant in the ANOVA, but an examination of the group means showed this to be almost meaningless. The test did not show small, rural school districts to be distinctive. The lowest percent of low-income students was found among large, rural and medium-sized, rural school districts. The next higher percentage was found among small, rural schools with urban school districts having the highest proportion of low-income enrollments.

Small, rural school districts in the East Central Illinois region were significantly wealthier than other school districts in equalized assessed valuation of real property per weighted average daily attendance (EAV/CWADA). Equalized assessed valuation per pupil was $71,200 for small, rural districts, compared with the study grand mean of $56,200. The average property wealth per pupil for urban districts was $48,000; for large, rural districts, $46,700; and for medium-sized rural districts, $55,200. This gives the small, rural districts the ability to raise more local funds for schools, but it should be noted that this phenomenon may not hold true for the rest of the State of Illinois, since the East Central region is a particularly affluent agricultural area compared with other farming areas in the state.

While small, rural districts may have significantly higher property wealth per pupil, they do not levy significantly higher taxes. The analysis of variance in school district operating tax rates did not produce significant differences among groups. This contradicted the contention that residents in small, rural districts were willing to tax themselves at a higher rate in order to preserve their small school districts. The variation within the four groups of schools districts was greater than the variation among them.

Two measures of school district spending levels were used in the study. These were the district's per capita tuition charge and the district's operating expense per pupil. The latter was more inclusive, including spending for transportation, school lunches, the handicapped, vocational education, and other special needs programs. The per capita tuition charge was a good measure of spending on basic programs. The ratio between the two spending figures were also included in the analysis as a test of the presence of special programs in selected district types. Specifically, it was an attempt to see if small, rural school district spent less on these "extra" programs, thereby having a lower ratio between operating expense and per capita tuition charge. All three of these variables were statistically significant. Small, rural school districts in this study had significantly higher per capita tuition charges, higher operating expenses per pupil, and lower ratios of operating expenses per pupil to per capita tuition

charges. As the data in Table 4 show, the gaps between small, rural districts and other districts in the study on these variables were substantial. Small, rural districts spend more per unit on education, with the bulk of the spending differences on maintaining regular programs.

ANALYSIS AND CONCLUSIONS

Small, rural schools are often characterized as offering substandard education programs and services. The findings of this study did not support that contention. The small, rural school districts in this study did not have significantly lower ACT scores than other districts. However, there was great variation within the small, rural district group on mean composite ACT. Some of the highest and the lowest ACT scores were found within this grouping. While small rural schools, as a group, were not a problem, some small, rural schools did have low achievement levels as measured by the ACT. Small, rural schools did not have a significantly smaller proportion of high school students enrolled in the basic subject areas of mathematics, science, English and social studies.

It was in the area of staffing that small, rural school differences began to emerge. However, those difference were not evident at the elementary level. Small, rural school districts did not have elementary pupil-teacher ratios that were significantly different from other districts. Mean elementary pupil-teacher ratios were remarkably constant across district groupings, although the data indicated wide variation within groups. A dramatic difference emerged when secondary pupil-teacher ratios were examined. Small, rural districts placed their resources in lower pupil-teacher ratios at the secondary level rather than in paying competitive salaries. Average administrative salaries were significantly lower in small, rural school districts and teacher salaries in medium-sized and small, rural districts were significantly lower than in urban and large, rural districts. Small, rural districts had higher per capita tuition charges and higher operating expenses per pupil. They used these additional resources to lower staffing ratios, at least at the secondary level. Higher spending levels were achieved without levying significantly higher taxes, partially because small, rural districts in this study were significantly wealthier in equalized assessed valuation per pupil than other districts. Also, small, rural districts spent less on special needs programs and devoted a larger proportion of their resources to the core educational program. Nonetheless, the results were not greater achievement by pupils in small, rural schools districts, but achievement levels generally similar to that of other districts. Any disadvantages of smallness were compensated for by more focused use of resources.

Small, rural school districts did not do an inferior job of offering quality educational services to their student, but their success came at a higher price. They might have worked well, but they were not necessarily cost effective. Care needs to be taken in specifying remedies. There was nothing in this study which indicated that greater achievement would be gained from creating larger units of rural school districts, nor that costs might be any lower. One interpretation is that the chief beneficiaries of rural school district consolidation would not be students, but teachers and administrators who would gain monetary benefits through boosts in salaries. This study indicated that small, rural school district were stable educational communities, with certain curricular advantages, which do a credible job of educating children. They do it at a higher price and teachers and administrators partially subsidized this advantage.

The so-called small, rural school problem is really just a school problem. Some schools do very well; other are not operating according to expectation. This study showed that for the school districts studied, neither size nor community type were consistently and significantly related to major school problems. Public policy-makers need to attend to problems of school performance, but to isolate one particular district type--such as small, rural school districts--does a disservice and masks the real problems. One difficulty in focusing on significant school

problems is the multiplicity of goals of schools and the related disagreement about valid performance indicators. This study used academic achievement indicators. Others might disagree with that. However arrived at, some consensus needs to be reached on what is expected of schools and then to monitor the performance of schools and school districts on those shared expectations. In a democracy, that can only be done through the public policy system. Small, rural schools may present some unique problems as well as opportunities, but as a class of districts, they neither exceed nor lag behind in their ability to offer adequate educational services. What is implied in this study is a change of attitude toward small, rural schools and a focus on educational performance in general.

NOTES

[1]Ellwood P. Cubberley, Public Education in the United States: A Study and Interpretation of American Educational History. (Boston, MA: Houghton Mifflin Co., 1919), 474.

[2]Chris A. DeYoung, Introduction to American Public Education, (New York: McGraw-Hill Book Co., Inc., 1942), 85.

[3]Jonathan P. Sher and Rachel B. Tompkins, "Economy, Efficiency and Equality: The Myths of Rural School and District Consolidation," in Education in Rural America: A Reassessment of Conventional Wisdom, Ed. Jonathan P. Sher (Boulder, CO: Westview Press, 1977), 45.

[4]Ibid., 76-77.

[5]David H. Monk and Emil J. Haller, Organizational Alternatives for Small Rural Schools: Final Report to the New York State Legislature, (Ithaca, NY: New York State College of Agriculture and Life Sciences at Cornell University, Department of Education, 1986).

[6]Robert P. Howard, Illinois: A History of the Prairie State (Grand Rapids, MI: William B. Erdmans Publishing Co., 1972), 544.

[7]Illinois State Board of Education, School District Organization in Illinois (Springfield, IL: Illinois State Board of Education, 1985), 39.

[8]This political controversy over school district reorganization and consolidation is well documented in Allan David Walker, "The Politics of School District Consolidation and Reorganization Reform in Illinois in 1985 and 1986," (Ph.D. diss., University of Illinois at Urbana-Champaign, 1988).

[9]James Gordon Ward, "In Pursuit of Equity and Adequacy: Reforming School Finance in Illinois," Journal of Education Finance, 13 (Summer 1987): 107-120.

Table 1. -- Operating School Districts in Illinois, 1944-45 to 1984-85

School Year	Number of Operating School Districts
1944-45	11,955
1949-50	4,800
1954-55	2,289
1959-60	1,689
1964-65	1,390
1969-70	1,227
1974-75	1,039
1979-80	1,012
1984-85	1,005

Source: Illinois State Board of Education

Table 2. -- Output and Curriculum Measures

Variable	Grand Mean	Coefficient of Variation X100	Group Means U	R1	R2	R3	F Ratio
Mean composite ACT	18.9	7.5	20.1	19.3	18.5	18.7	2.28
Percent of class of 1986:							
Taking ACT	60.7	19.9	55.9	58.1	59.1	68.0	1.29
Enrolled in Math	73.1	9.9	76.7	72.8	73.2	71.4	0.70
Enrolled in Science	58.2	16.6	55.6	58.5	57.5	60.2	0.35
Enrolled in English	93.6	11.2	104.5	95.0	92.1	89.6	2.77
Enrolled in Social Studies	63.3	22.3	64.5	65.9	64.9	57.7	0.86

* Significant at .05 level (df3,48; $F_{cv.05} = 2.80$)

Table 3. -- Staffing Variables

Variable	Grand Mean	Coefficient of Variation X100	Group Means U	R1	R2	R3	F Ratio
Elementary pupil-teacher ratio	19.5	14.6	19.6	19.5	19.9	18.7	0.49
Secondary pupil-teacher ratio	14.8	12.5	22.4	16.6	14.8	9.4	253.10*
Pupil-administrator ratio	208.8	18.2	235.6	242.0	223.3	141.1	17.58*
Average teacher salary (000)	20.7	7.3	23.6	21.3	20.2	19.5	11.01*
Average administrator salary (000)	35.0	7.7	37.3	35.5	35.5	32.7	4.59*

* Significant at .05 level (df3, 48; $F_{cv.05} = 2.80$)

Table 4. -- Demographic and Financial Variables

Variable	Grand Mean	Coefficient of Variation X100	Group Means U	R1	R2	R3	F Ratio
Percent student mobility	14.4	35.2	23.7	14.8	12.8	12.1	7.69*
Percent low income students	17.5	46.4	24.9	16.1	14.3	20.3	3.07*
EAV/CWADA (000)	56.2	36.7	48.0	46.7	55.2	71.2	3.27*
Operating tax rate	3.10	12.7	3.13	2.95	3.07	3.27	1.33
Per capita tuition charge	2683	15.9	2564	2432	2480	3301	11.35*
Operating expense per pupil	3033	13.55	2965	2795	2818	3632	11.63*
Ratio operating exp. to tuition charge	1.14	3.5	1.16	1.15	1.14	1.10	4.09*

* Significant at .05 level (df3, 48; $F_{cv.05} = 2.80$)